

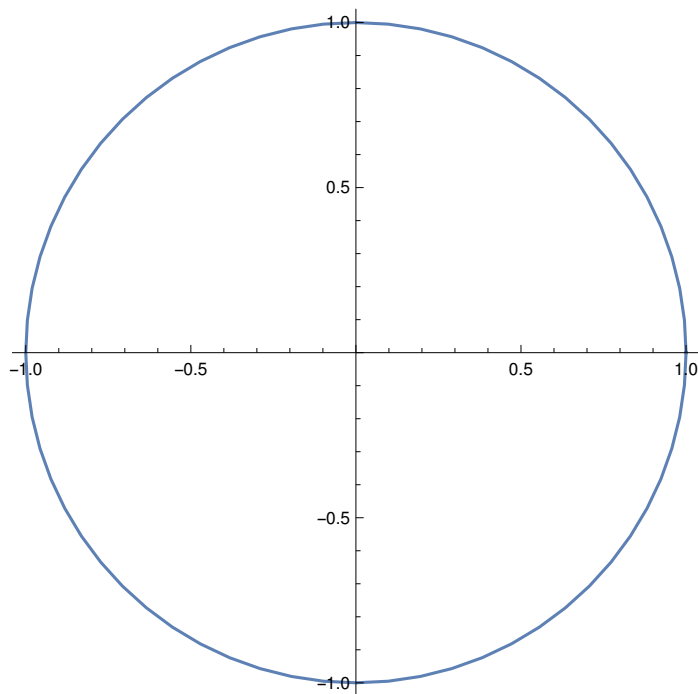
Compass correction, finding a formula.

Michiel van Wessem

s the amount of deviation. The
deviation to the West and a value
less than 1 indicates a deviation to the East.

This is a deviation graph with no deviation at all

```
ListPolarPlot[Table[{ $\alpha$ , 1}, { $\alpha$ , 0, 2  $\pi$ ,  $\pi/32$ }], Joined  $\rightarrow$  True]
```



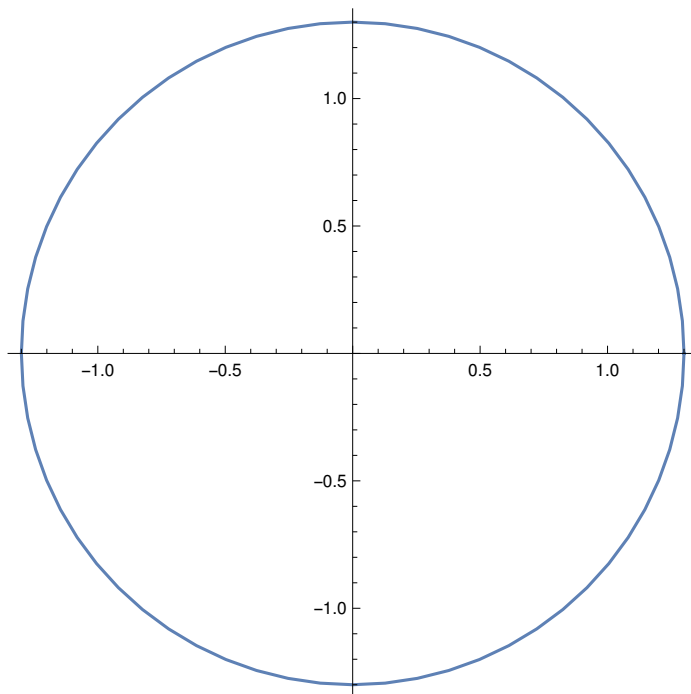
.

Here's a description of these types:

Coefficient A effects all headings equally.

Example:

```
a = .3  
ListPolarPlot[Table[{ $\alpha$ , 1 + a}, { $\alpha$ , 0, 2  $\pi$ ,  $\pi/32$ }], Joined  $\rightarrow$  True]  
0.3
```



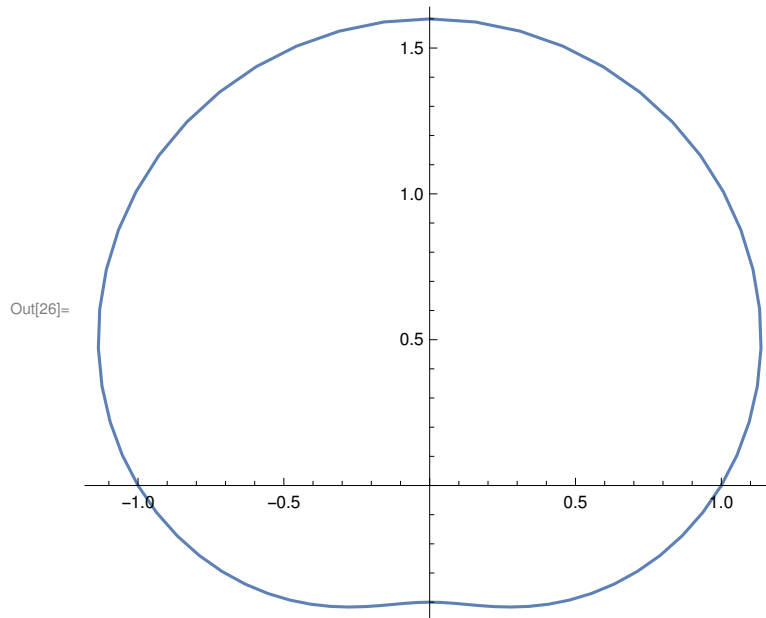
Coefficient B

Greatest on easterly and westerly headings.

This is a directional offset.

Example:

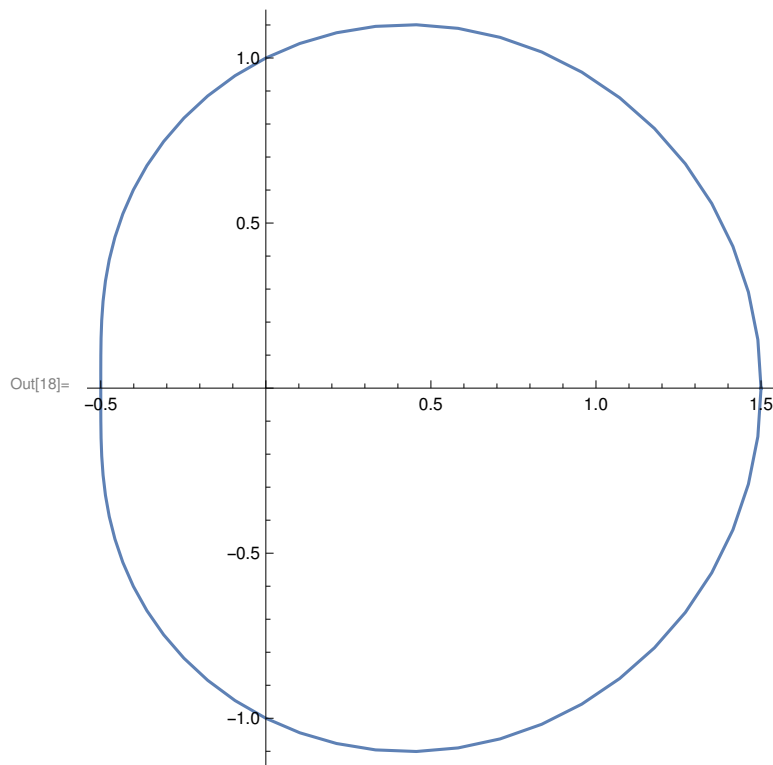
```
In[25]:= b = .6  
ListPolarPlot[Table[{ $\alpha$ , 1 + b * Sin[ $\alpha$ ]}, { $\alpha$ , 0, 2  $\pi$ ,  $\pi/32$ }], Joined  $\rightarrow$  True]  
Out[25]= 0.6
```



Coefficient C
his is a directional offset.

Example:

```
In[17]:= c = .5
ListPolarPlot[Table[{α, 1 + c * Cos[α]}, {α, 0, 2 π, π/32}], Joined → True]
Out[17]= 0.5
```



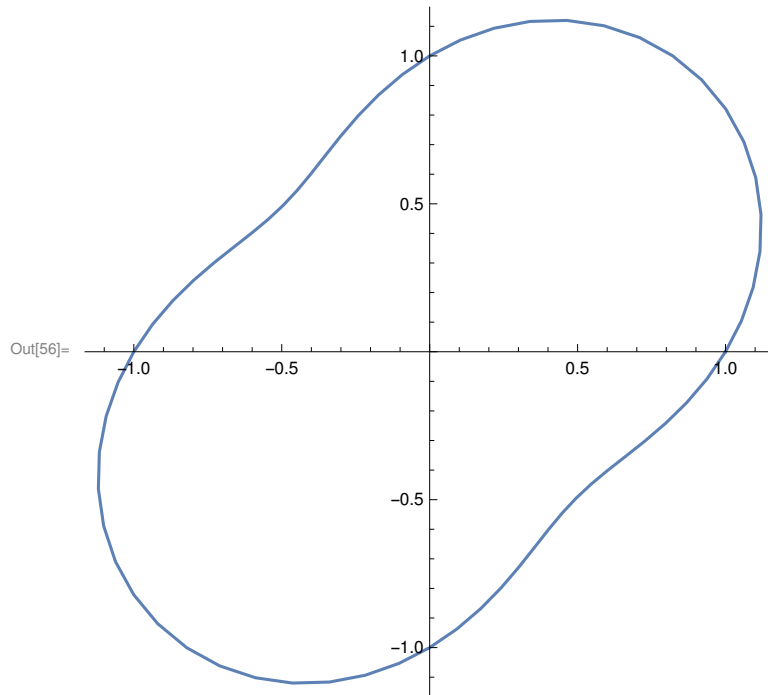
*ould also be done by with a
phase angle and magnitude.*

Coefficient D

Greatest on NW, SW, SE and NE headings

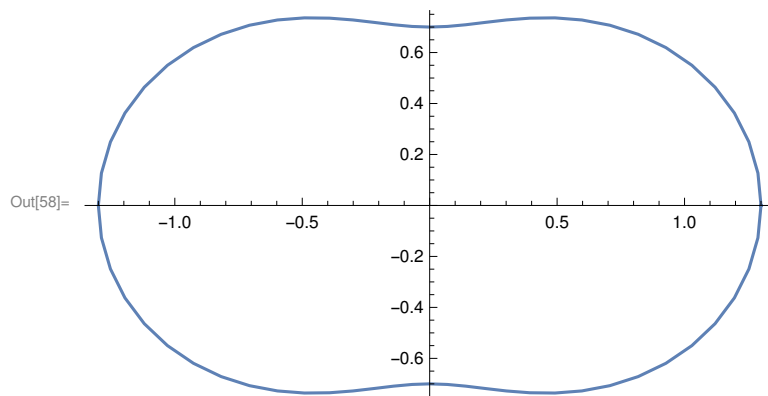
Example:

```
In[55]:= d = .3
ListPolarPlot[Table[{α, 1 + d * Sin[2 α]}, {α, 0, 2 π, π / 32}], Joined → True]
Out[55]= 0.3
```



Coefficient E
Greatest on N, S, E, W headings

```
In[57]:= e = .3
ListPolarPlot[Table[{α, 1 + e * Cos[2 α]}, {α, 0, 2 π, π / 32}], Joined → True]
Out[57]= 0.3
```



Combined:

```
In[72]:= a = .3
b = .4
c = .5
d = .2
e = .3
ListPolarPlot[Table[{ $\alpha$ , 1 + a + b * Sin[ $\alpha$ ] + c * Cos[ $\alpha$ ] + d * Sin[2  $\alpha$ ] + e * Cos[2  $\alpha$ ]},
{ $\alpha$ , 0, 2  $\pi$ ,  $\pi$  / 32}], Joined -> True]
```

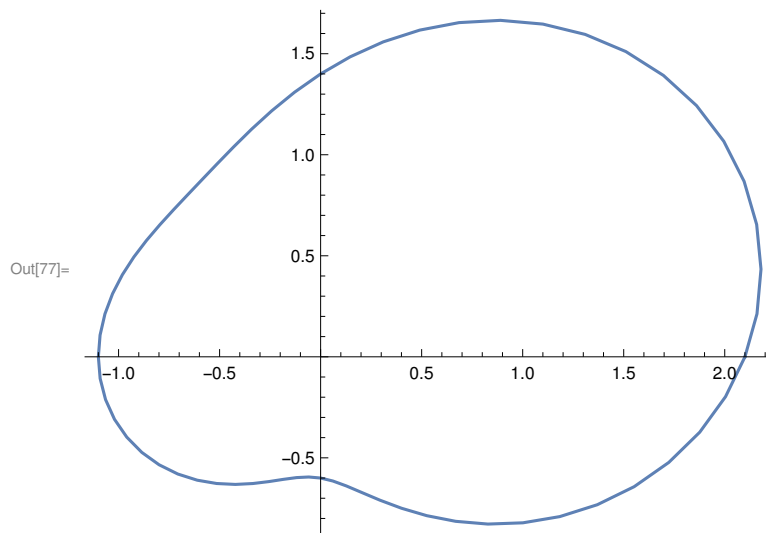
Out[72]= 0.3

Out[73]= 0.4

Out[74]= 0.5

Out[75]= 0.2

Out[76]= 0.3



```
ListPolarPlot[Table[{ $\alpha$ , 1 + .5 * Sin[ $\alpha$  - .5  $\pi$ ] + .4 * Sin[ $\alpha$  - .2  $\pi$ ] + .7 Sin[ $\alpha$  +  $\pi$ ]}, { $\alpha$ , 0, 2  $\pi$ ,  $\pi$  / 100}]]
```

References:

s+influence+grap

h&source=bl&ots=QxgBQ0nV8m&sig=0ROzDq_W0EvkAildXnspkka-AEo&h-

l=en&sa=X&ved=0ahUKEwjUnK-WiJfMAhVNwmMKHY5ADowQ6AEIJjAB#v=onepage&q=compass%20influence%20graph&f=false